

What is claimed is:

1. A control method for a heat processing system comprising a combustor that has supplied and then burns a burning gas composed of fuel and air for combustion, a heating device that heats a heating object by introducing a combustion gas produced by said combustor and using the heat of said combustion gas, and a heat exchange device
 5 that introduces said combustion gas used by said heating device and transfers the heat to said mixed gas composed of fuel and air from said combustion gas, wherein the control method comprises the steps of:

setting the combustion gas temperature in said combustor based on the required value of the temperature of said heating object obtained by heat processing by said
 10 heating device;

setting and adjusting the flow volume of said air depending on said set combustion gas temperature; and

- controlling the temperature of said heating object after said heat processing so as to obtain said required value by compensating said set combustion gas temperature
 15 based on the comparative value of the required value of the temperature of said heating object and the actual temperature of said heating object after said heating process.

2. A control method for a heat processing system having a combustor that has supplied and then burns a burning gas composed of fuel and air for combustion, a heating device that heats a heating object by introducing a combustion gas produced by said combustor and using the heat of said combustion gas, and a heat exchange device
 5 that introduces said combustion gas used by said heating device and transfers the heat to said fuel and said air from said combustion gas, wherein the control method comprises

the steps of:

setting an amount of heat supplied to said heating device and a combustion gas temperature of said combustor based on the required value of the amount and the

10 temperature of said heating objects obtained by heat processing by said heating device;

setting and respectively adjusting the flow volume of said fuel and the flow volume of said air depending on said set amount of heat to be supplied to the heating device and said set combustion gas temperature; and

15 controlling the actual temperature of said heating object after said heating processing and the temperature of said heating object after said heat processing so as to attain said required value by compensating at least one of either said set amount of heat to be supplied or said set combustion gas temperature based on the comparative value of the required value relating to the temperature of said heating object.

3. A control method for a heat processing system according to claim 1 or claim 2 wherein the control method further comprises the steps of:

obtaining an oxygen concentration corresponding to said set combustion gas temperature using a map that shows a relationships between the combustion gas

5 temperature and the oxygen concentration in the combustion gas, and adjusting the amount of said air so that the actual oxygen concentration of the burning gas in said combustor approaches the required oxygen concentration.

4. A control method for a heat processing system according to one of claims 1 and 2, wherein said heating object prior to the heat processing by said heating device is the raw fuel of the fuel cell, said heating device is a vaporizer that generates the fuel vapor by vaporizing said raw fuel, said heating object obtained by heat processing by said heating

